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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,712	06/30/2003	Richard S. Perry	884.941US1	3752
21186	7590	09/14/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			NGUYEN, VINH P	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,712

Applicant(s)

PERRY, RICHARD S.

Examiner

VINH P. NGUYEN

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 15-20, 22-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-20 is/are allowed.
- 6) ☒ Claim(s) 1-6, 15-17 and 22 is/are rejected.
- 7) ☒ Claim(s) 7, 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of “a first probe” as recited in claim 15 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Claims 18-20 are objected to because of the following informalities:

In claim 18, it is unclear how first pad and second pad are interconnected with the printed circuit board and the electrical component. Furthermore, it is unclear how the probes are interrelated with the contact steps.

Claims 19-20 share the same indefiniteness with claim 18, therefore they are also objected.

Corrections are required.

3. Claims 15-17 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 15, it is unclear what “a first probe” and “electrical elements” comprises of. Are they shown in any of drawings? Furthermore, the function of the first probe is not clear.

In claim 22, it is unclear how “a printed circuit board” and “a component” are interrelated and associated with “a device under test” in claim 15. Furthermore, it is unclear whether the printed circuit board and the component are parts of the fixture or they are parts of the electrical device.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Beck et al (Pat # 4,138,643).

As to claim 1, Beck et al disclose an assembly as shown in figures 5-6 having at least an element (90) having a surface (sharp tip) for electrically contacting a first plane (big solder bump) in a device under test (circuit board) and a probe (70) having a free end (24) positioned in a second plane (smaller solder bump) for electrically contacting the second plane in the device under test (21).

As to claim 2, the first plane (big solder bump) of Beck et al is a ground plane.

As to claim 3, it appears that the length of the probe (70) is longer than the length of the element (90) having a surface for contacting the first plane (big solder bump).

As to claim 4, it appears that the element (90) shields the probe (70).

As to claim 5, the element (90) surround the probe (24) to shield the probe (70)

As to claim 6, it appears that the element that shields the probe further comprises features for contacting a ground plane (big solder bump) dimensioned to prevent interference from radio signals of selected frequency.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beck et al (Pat # 4,138,643 in view of Boll (Pat # 4,871,964)

In claim 23, Beck et al disclose an assembly as shown in figures 5-6 having at least an element (90) having a surface (sharp tip) for electrically contacting a first plane (big solder bump) in a device under test (circuit board) and a probe (70) having a free end (24) positioned in a second plane (smaller solder bump) for electrically contacting the second plane in the device under test (21). However, Beck et al do not mention about having a plurality of contact elements for contacting a plurality of pads (big solder bumps) located in a first plane on the device under test (printed circuit board under test). However, Boll et al teach that it would have been well known to have additional contact elements (48) for contacting and grounding a plurality of contact pads (36,38).

It would have been obvious for one of ordinary skill in the art to provide the assembly (70) of Beck et al with an additional contact element (90) as taught by Boll et al so that additional contact element would make contact with additional pad located in a first plane on the device under test (printed circuit board). Furthermore, duplication of additional contact element would have been an obvious design choice since it has no patentable significance unless a new and unexpected result is produced. (see *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960))

As to claim 24, the plurality of pads (big solder bumps) and the at least one other pad (smaller solder bump) are contacted by contacts (70,90) positioned near one side of the device under test (29).

As to claim 25, it appears that the probe (70,90) passes through an opening (air) in the device under test (printed circuit board).

As to claim 26, the probe (90) is connected to a ground plane of ground pads (big solder bump).

As to claim 27, the probe (12) is connected to a ground plane of ground pads (big solder bump) and the ground plane are located substantially coplanar with the first plane of the other pad (smaller solder bump).

8. Claims 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 7 is allowable since the prior art does not disclose the features for contacting a ground plane include a plurality of pointed peaks separated by valleys wherein the height of the peaks are dimensioned to prevent passage of radio signals of a selected frequency. Since claim 8 depends on claim 7, this claim is also allowed accordingly.

9. Claims 18-20 are allowed. The prior art does not disclose a method for testing a device under test wherein the device under test is a circuit board having an electrical component attached to a primary side of the circuit board and wherein passing a probe through a portion of the device under test includes passing a probe through an opening in the circuit to contact the electrical component attached to the primary side of the circuit board board and in combination of using method steps.

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10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Frey (Pat # 6,281,690) disclose coaxial radio frequency test probe.

Gourse et al (Pat # 5,488,313) disclose test probe and circuit board arrangement for the circuit under test for microstrip circuitry.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH P. NGUYEN whose telephone number is 571-272-1964. The examiner can normally be reached on 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HA T. NGUYEN can be reached on 571-272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


VINH P NGUYEN
Primary Examiner
Art Unit 2829
09/08/06